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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,810	03/29/2002	Christopher V W Hogue	571-766	4836

1059 7590 04/11/2005

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EXAMINER

DO, PENSEE T

ART UNIT

PAPER NUMBER

1641

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/926,810

**Applicant(s)**

HOGUE ET AL.

**Examiner**

Pensee T. Do

**Art Unit**

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2002.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☒ Claim(s) 1-44 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-12, drawn to a carrier comprising a matrix comprising a biomolecular interaction entrapped within the matrix

Group II, claim(s) 13-31, drawn to a method for preparing the carrier having a biomolecular interaction incorporated within the carrier that can be reversibly denatured.

Group III, claim(s) 32-44, drawn to a method for screening a compound to determine the degree of inhibition or binding of biomolecular interaction by the compound comprising contacting the compound to be tested with components of a biomolecular interaction that are incorporated within a carrier and are capable of forming a biomolecular interaction in the carrier.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The corresponding technical feature for the three groups is a carrier having incorporated therein a biomolecular interaction. However, such technical feature is taught in the art as follows:

Kopetzki et al. (US 6,312,916) teaches a test kit to qualitatively or/and quantitatively detect an analyte in a test sample which contains a polypeptide capable of binding to biotin as well as further components of the respective assay and an interference elimination reagent which comprises a mutein. The interference elimination reagent can be present in a soluble form or on a solid phase in particular on a microtitre plate, a microreagent vessel, and a membrane or immobilized on microbeads. The mutein is avidin and streptavidin in which at least one amino acid of the native polypeptide is substituted and which has a binding affinity to biotin as a system that can be regenerated for binding biotinylated substances. The solid phase on which the streptavidin muteins are immobilized can be sensor chips, reaction vessels such as polystyrene tubes or cuvettes, microtitre plates, microbeads, latex particles and support materials for affinity columns. Biotinylated substances are conjugates of biotin and biotin analogues, being those substance which form a complex with the biotin binding pocket of streptavidin or avidin. The solid phase can be used in assays for the detection of analytes, for the investigation of receptor-ligand interactions and for the purification or analysis of biotinylated substances. On the other hand the binding affinity of the solid phase to biotin or a biotinylated substance is sufficiently low to enable a regeneration of the solid phase, i.e. it is possible to detach the biotin. The detachment is carried out by reducing the pH or/and by addition of chaotropic substances, i.e. substances which interfere with the formation of hydrogen bridges. Alternatively the detachment for isolating the biotinylated substances can also be achieved by adding free biotin or/and biotin analogues. (see col. 6, line 43-col. 7, line 50). Solid phase such as affinity

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columns inherently have pore size that inhibit leaching out of the biomolecular interaction or biological species thereof. The biological species of the biomolecular interaction can under naturing conditions associate with one another. The biomolecular interaction is bioactive. Regarding claims 62-65, because the limitations of these claims are drawn to a process of use or a process of making, they are not given any patentable weight.

Babich et al. (US 6,395,299) teaches a sol-gel silica alkoxides matrix covalently attached to a biotin group and a reaction center attached to an avidin. The biotin/avidin interaction would effectively attach the reaction center to the silica oxide framework of any sol-gel matrix. An antibody/hapten pair could be used in the same fashion. The association of Biotin/avidin is a hydrogen bond. (see col. 29, lines 50-65). Pore size is an important characteristic of any sol-gel matrix, because it may affect what materials may diffuse in and out of the matrix, and the leachability of any encapsulated reaction center and/or additives. The matrix of Babich contemplates pore sizes ranging from the angstrom level to the micron level depending on the material being encapsulated in the matrix. (col. 30, lines 35-44). The matrix uses a biotin/avidin interaction to attach a reaction center, i.e. enzyme such as L-amino acid decarboxylase to convert a prodrug such as L dopa to dopamine for treating Parkinson's disease. Thus, the matrix is implanted in the brain of a subject with Parkinson's disease. The dopamine must diffuse out of the matrix into the brain. (see col. 7, lines 11-34; col. 16, lines 51-65; col. 17, lines 43-58). Other oxides including metal oxides may be used to form the matrix. (see col. 30, lines 45-50). The matrix can be administered and remained in contact with a

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biological fluid, such as blood, internal organ secretions, mucus membranes, cerebrospinal fluid and the like. The length of the period during which the matrix remains active enough so as to produce a therapeutic effect may depend on a variety of features. Silica-based sol gel matrices can be active for periods of several months. (see col. 57, lines 24-35). Regarding claims 60, 62-65, because the limitations of these claims are drawn to a process of use or a process of making, they are not given any patentable weight.

Since the corresponding technical feature is well taught in the art, these groups must rely on a different new and novel corresponding technical feature. Such novel corresponding technical feature is lacking among the three groups.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pensee T. Do whose telephone number is 571-272-0819. The examiner can normally be reached on Monday-Friday, 7:00-3:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pensee T. Do  
Patent Examiner  
April 1, 2005

  
CHRISTOPHER L. CHIN  
PRIMARY EXAMINER  
GROUP 1800-1641  
4/4/05